Annual Report: FY 2013, 2014, and 2015 Cooperative Recovery Initiative

(A Progress Report was originally submitted in November 2013. For this Annual Report, we have updated the original Progress Report to incorporate (1) additional work accomplished in 2014 with CRI funds and (2) additional monitoring money supplied from the National Resource Program Center).

Project Name: Endangered Roseate Tern Breeding and Staging Habitat Management and Enhancement

Project Manager/Primary Contact: Stephanie Koch
Phone Number: 978-443-4661, x24
Email: Stephanie_Koch@fws.gov

Project Location: Breeding and staging sites throughout the northeast including: Stratton Island, Eastern Egg Rock, and Rachel Carson NWR in Maine; Seavey Island in New Hampshire; Monomoy NWR, Nantucket NWR, Bird Island, Ram Island, and Penikese Island in Massachusetts; Trustom Pond NWR in Rhode Island; Stewart B. McKinney NWR in Connecticut; Great Gull Island in New York.

Project Goal: The goals of this project are to enhance and protect breeding and staging habitat to increase productivity, and improve survival of fledglings and adults prior to fall migration. This effort will reduce the risks from predation, habitat loss, and disturbance that are all exacerbated by roseate terns' use of a very small number of breeding and staging locations.

The Northeast population of the roseate tern numbered 8,500 pairs at its highest (recorded) point in the 1930s, but by 1988 it had dropped to 3,000. Numbers climbed to 4,300 pairs by 2000 but have since declined range-wide to only 3,000 pairs. The Endangered Northeast population of roseate tern is entirely found within Region 5 and Canada and uses a network of island and beach nesting sites scattered across the landscape. Approximately 93% of the breeding birds are concentrated in three major colonies: Great Gull Island, NY and Bird and Ram Islands, MA. During post-breeding staging, roseate terns from throughout the range congregate at staging areas in and around Cape Cod, MA to prepare for their winter migration to South America. The recovery of this species hinges on immediate action due to its recent population decline, low abundance, extremely concentrated population on both the breeding and staging grounds, and breeding range contraction. There is tremendous opportunity for a landscape-level concerted effort to resolve some of the limiting factors to the future recovery of this species.

Expected Conservation Outcome of the Project:

1. Breeding: Outcomes of management and restoration at breeding sites include increased habitat to support more breeding pairs, dispersion of breeding roseate terns to reduce crowding and vulnerability at any one site, and enhanced productivity.

2. Staging: Outcomes of management at staging sites include a better understanding of potential disturbances at staging sites, reduced disturbance, increased abundance of roseate terns on project area staging grounds, collection of data from field readable bands providing information on roseate tern movements and behavior, and perhaps enhanced adult/juvenile survival.

Expected long-term benefits from breeding and staging site management (beyond the timeframe of this project because roseate terns begin breeding at age 3 or 4) are enhanced recruitment to the breeding population, enhanced adult survival, and a resulting increased abundance of breeding birds.

Project Measureable Objectives and How Measured:

1. *Restore or enhance 82 acres of Roseate Tern nesting habitat on 7 different sites:*			
Nesting Habitat Objective	**2013 Accomplishments**	**2014 Accomplishments**	**2015 Accomplishments**
On *Stratton Island* (ME), enhance 1.5 acres of nesting habitat by hand pulling invasive wild radish, using outdoor carpeting to prevent regrowth, and adding 105 rock and wooden nest shelters in 2013.	Administrative work, preplanning, vegetation management and nest box placement 100% accomplished through Cooperative Agreement with National Audubon Society.	Vegetation management and nest box placement 100% accomplished through Cooperative Agreement with National Audubon Society. Completed Roseate Tern nest monitoring in May-July 2014 and vegetation monitoring in September 2014 (both 100%). Achieved 70% reduction of invasive wild radish in September 2014 as compared to September 2013.	Vegetation management and nest box placement 100% accomplished through Cooperative Agreement with National Audubon Society. Completed Roseate Tern nest monitoring in May-July 2015 and vegetation monitoring in September 2015 (both 100%). Achieved 90% reduction of invasive wild radish in September 2015 as compared to September 2013.
On *Eastern Egg Rock* (ME), enhance 1.5 acres of nesting habitat by hand pulling invasive wild radish, using outdoor carpeting to prevent regrowth, placing 40 wooden nesting boxes, and reducing Laughing Gull population in 2013.	Administrative work, preplanning, vegetation management and nest box placement 100% accomplished through Cooperative Agreement with National Audubon Society. Laughing Gull population reduction 30% accomplished through contract with APHIS. Contract has been extended so work can be completed in Year 2.	Vegetation management and nest box placement 100% accomplished through Cooperative Agreement with National Audubon Society. Completed Roseate Tern nest monitoring in May-July 2014 and vegetation monitoring in September 2014 (both 100%). Achieved 40% reduction of invasive wild radish in September 2014 as compared to September 2013. Laughing Gull population reduction 100% completed in 2014 through contract with APHIS. Achieved 30% reduction of nesting Laughing Gulls in "no-Laughing Gull buffer zone" where Laughing Gulls compete with Roseate Terns for habitat.	Vegetation management and nest box placement 100% accomplished through Cooperative Agreement with National Audubon Society. Completed Roseate Tern nest monitoring in May-July 2015 and vegetation monitoring in September 2015 (both 100%). Achieved 75% reduction of invasive wild radish in September 2015 as compared to September 2013. Achieved 37% reduction (compared to 2013) of nesting Laughing Gulls in "no-Laughing Gull buffer zone" where Laughing Gulls compete with Roseate Terns for habitat.
On *Seavey Island* (NH), enhance 0.5 acres of nesting	Administrative work and preplanning 100% completed but	Vegetation management goal 100% achieved, and exceeded, with 3 acres	Annual monitoring work 100% completed. Vegetation response to the

habitat through herbicide application in spring 2014 and prescribed burning in the following year.	habitat management didn't occur in 2013 as planned due to timing of funds disbursement and plant / nesting phenology. Schedule on track for herbicide treatment in spring 2014 and burn in fall 2014 to be conducted through Cooperative Agreement with NH Department of Fish and Game.	of nesting habitat enhanced. Management plan prepared by NHFG and approved by NH State Lands Management Team in June 2014. Herbicide applied on 1 acre of nesting habitat to reduce invasive species and thick vegetative cover. Prescribed burn accomplished in September 2014. Baseline vegetation data was collected and will be monitored in 2015 to document vegetative response to herbicide and fire as well as on tern nest success.	2014 burn exceeded expectations. The fire burned through the duff layer in several areas of the island decreasing litter and exposing bare earth and some mineral soil, and these remained bare through the beginning of the nesting season. In burned areas tall grass and bramble decreased, and low herbaceous plants increased. There were 76 Roseate Tern nests in 2014 and 74 in 2015. Productivity remained nearly the same at 0.91 and 0.93 per nest respectively. However, Roseate Terns did nest in new areas affected by the burn. A more substantive change was noted for Common Terns. Overall, nest density decreased while productivity increased from 0.78 per nest in 2014 to 1.1 in 2015.
On *Monomoy NWR* (MA), enhance 1 acre of nesting habitat by reducing American beach grass and planting native coastal plants in 2013 to achieve a more favorable vegetation-to-sand ratio.	Administrative work and preplanning 100% completed, but planting didn't occur in 2013 as planned due to timing of funds disbursement and plant / nesting phenology. Schedule on track for plant plug deliveries in spring and fall of 2014 through contract with New England Wildflower Society.	Habitat management 100% completed. Completed seed collection in fall 2013 and contracted with New England Wildflower Society to grow seaside goldenrod. Planted 750 plants in May 2014 and 1450 plants in August 2014 in three study areas. 50% of roseate tern pairs nested within the planting study areas. Photo plots were established to study plant growth and monitoring will continue through 2015.	Annual monitoring work 100% completed. Photo plot monitoring conducted throughout the growing season in 2015. Plants are continuing to grow and have become established. Nesting structures and attraction sound system were placed in the colony. Nesting roseate tern pairs increased from 8 in 2014 to 11 in 2015 with many pairs nesting in structures or in clumps of vegetation including the newly established goldenrod.
On *Penikese Island* (MA), restore 75 acres of nesting habitat by: 1) reducing populations of invasive shrubs	Administrative work and preplanning 100% completed. Although disbursement of funds did not occur in time for any of	Completed collection of native seed in Oct 2013. Contracted for plant propagation and worked with local agricultural high school students to	Large-scale soil preparation and seeding of native grasses 100% completed in April 2015. Placed tern decoys in restored areas in May 2015.

by 95% after three years; 2) decreasing vegetative cover on 15 acres adjacent to tern colony by 20% in three years; 3) attracting Roseate Terns to restored area within two years after treatment and increasing number of nesting Roseate Terns in subsequent year(s); 4) maintaining 20% higher Roseate Tern productivity (number of chicks fledged per nest) in restored area compared to non-restored area.	this work to be covered by CRI funds, herbicide application, some vegetation monitoring, and a limited amount of native plantings did occur with other funding sources. Schedule on track for habitat restoration, tern attraction, and monitoring in spring and summer of 2014 through Cooperative Agreement with MassWildlife.	propagate the remainder of the plants. Contracted for native grass seed pre-treatment. Completed ROST nest monitoring in May-Jul 2014 (100%); 10% of nests occurred in restored area. Completed herbicide treatment across 100% of the island in August 2014. Plantings 100% completed as of October 2014, as well as vegetation monitoring. Large-scale seeding of grasses scheduled for December 2014 - January 2015.	Completed ROST nest monitoring in May-Jul 2015 (100%). At least 264 Common Tern pairs and 0 ROST pairs nested in restored areas. Completed vegetation monitoring in October 2015. Pre-planning for habitat management activities through fall 2016 occurred in Nov 2015.
On Stewart B. McKinney NWR (CT), restore 2 acres of nesting habitat by mowing, rototilling, brush cutting, applying herbicides/salt water, pea-sized gravel and sand/fill, and weed mat installation spring 2013, and apply different fill materials in revetment.	Habitat work 75% accomplished with mowing, rototilling, weed mat and gravel installation conducted by Refuge staff. Schedule on track for herbicide application in fall 2013.	Habitat management 100% completed. In 2014 cleared staghorn sumac which is taking over nesting areas and offering perches for predators. Also refreshed nesting materials (gravel and weed mat areas). Management has successfully encouraged more Common Terns to nest on the higher elevations of the island, alleviate some pressure on the Roseate Tern nesting areas on the perimeter of the island.	Annual monitoring work 100% completed. Colony was monitored 24/7 during the nesting season to monitor nesting terns, productivity, and response to habitat management, and discourage predator presence (especially black-crowned night-herons). Additional habitat management was also accomplished through new arrangements of nest boxes, use of landscape fabric and heat-treated mulch, and herbicide treatments to remove invasives and discourage predators from perching or hiding. Roseate Tern nest counts were up (by 71% from 2014; percent change) in 2015 and concentrated in areas where habitat was enhanced.
On Great Gull Island (NY), restore 0.5 acres of nesting habitat by manipulating vegetation, terracing slopes in	Administrative work and preplanning nearly 100% completed. Habitat management 50% accomplished (vegetation	Habitat management work 100% achieved, and exceeded. Hand pulling of Black Swallowwort was implemented in spring 2014, but	Habitat management work and monitoring work 100% achieved. Black Swallowwort removed from two nesting areas in mid-June and mid-

spring and fall 2013, and adding nesting boxes in summer 2013.	hand-pulling and herbicide application) due to timing of funds disbursement and plant / nesting phenology. Schedule on track for terracing and nest box installation in 2014 through Cooperative Agreement with American Museum of Natural History.	terns arrived back to nesting areas early, so herbicide spraying was deferred until October 2014 and spring of 2015. In April 2014, CT National Guard Chinook helicopter made three trips to bring 2700 pounds of lumber to the island. Lumber was used to build a total of 58 new terraces and to repair nesting structures on 36existing terraces. Eighty seven sets of nesting "houses" with 6-7 compartments each were constructed for the new terraces, as well as 12 blinds from which to observe the terraces for monitoring purposes. This exceeds the objective of 500 new nesting structures now in place for next season. Terraces were started early in the season and finished in early September. Blinds were moved into place in September – October 2014 in preparation for next year.	July; no herbicide spraying done this year. In April 2015 Connecticut Air National Guard brought lumber by helicopter to the island. Lumber was used in constructing 26 new Roseate Tern nesting terraces on the north and south sides of the island in April 2015 and an additional 8 terraces in September 2015. In total over the two years 92 terraces were constructed and wooden nest boxes added to provide over 800 new cavities for Roseate terns to nest. In June 2015 lattice supports and canvas tops and sides were put on the blinds constructed in 2014, making these blinds available for use in conducting monitoring work in the 2015 nesting season.

2. ***Increase overall annual productivity (chicks fledged / pair or nest) of Roseate Terns throughout the breeding range. Productivity in past years has varied significantly between sites, thus the target productivity levels for this project are site-specific.***

Productivity Objective	2013 Final Productivity	2014 Final Productivity	2015 Final Productivity
Stratton Island (ME): Increase productivity to above the 2008-2012 5-year average of 1.22 chicks/pair through targeted predator control and nesting structures.	Objective achieved - 1.27 chicks / pair (nesting structures installed; predator control work 50% completed)	Objective not achieved - 0.99 chicks / pair; fell slightly short of objective primarily due to small clutch sizes in 2014. (nesting structures installed; predator control work 100% completed)	Objective achieved - 1.38 chicks / pair (nesting structures installed; predator control work 100% completed)
Eastern Egg Rock (ME):	Objective achieved - 0.93 chicks /	Objective achieved - 1.19 chicks /	Objective achieved - 1.19 chicks /

Increase productivity to above the 2008-2012 5-year average of 0.90 chicks/pair through targeted predator control and nesting structures.	pair (nesting structures installed; predator control work 50% completed)	pair (nesting structures installed; predator control work 100% completed)	pair (nesting structures installed; predator control work 100% completed)
Seavey Island (NH): Increase post-fledging chick survival through expanded predator management (primarily gulls) into the end of the breeding season and beginning of post-breeding staging period.	Monitoring did not occur this year because the expanded predator management didn't occur; timeline on track for implementation in Year 2 through Cooperative Agreement with NH Fish and Game.	Productivity objective not established for this site, but decent in 2014 - 0.91 chicks/pair NHFG contracted with Terns LLC to control gulls during the nesting season, and to monitor potential staging use by Roseate Terns as a measure of post-fledging chick survival. Staging number of Roseate Terns was lower in 2014 than previous years. The presence of a Peregrine Falcon throughout the season and arrival of a Snowy Owl in mid-August may have impacted the terns. The presence of the falcon and owl had a significant effect on the gulls. There was very little pressure on the terns by the gulls throughout the season; no gulls were removed this season.	Productivity objective not established for this site, but decent in 2015 - 0.93 chicks/pair NHFG contracted with Terns LLC and the Shoals Marine Lab to control gulls during the nesting season. Pressure from avian predators was constant throughout the majority of the breeding season. An immature Peregrine Falcon visited the colony on a few occasions but did not have any significant impact on the colony. Herring and Great Black-backed Gulls had minimal impact on the terns this season. They were observed taking eggs, chicks and fledglings but the pressure was light as compared to previous seasons. In 2015 there were limited observations of Roseate Terns staging on Seavey Island.
Monomoy NWR (MA): Maintain a productivity of at least 1.0 chicks/pair through targeted predator control and nesting structures.	Objective achieved - 1.13 chicks / pair (nesting structures installed; predator control work 100% completed)	Objective achieved – 1.38 chicks/pair (nesting structures installed, predator work 100% completed)	Objective achieved – 1.27 chicks/pair (nesting structures installed, predator work 100% completed) Pair numbers increased this year from 8 to 11, but two pairs were

			unsuccessful at hatching any chicks. All chicks were banded using plastic field readable bands and could therefore be identified after leaving the colony.
Bird, Ram, and Penikese Islands (MA): Remove a minimum of 90% of predatory individuals and increase productivity to above the 2008-2012 5-year average of 1.25 chicks/pair at Bird, 1.20 chicks/pair at Ram, and 0.75 chicks/pair at Penikese.	Objective achieved Bird I - 1.40 chicks /pair Objective achieved Ram I - 1.31 chicks/pair No nesting birds on Penikese Island (Note: predator control work and monitoring was 100% completed, but was implemented with other funds because CRI funds were not available in time. Therefore, the CRI money will be used in 2014 to repeat work).	Bird Island – objective not achieved; 0.85 chicks / pair Ram Island – objective not achieved; 0.98 chicks / pair Penikese Island – objective achieved – 1.08 chicks/pair Achieved objective of removing ≥90% of predatory individuals; however, productivity objective not met at Bird and Ram Islands due to unusually low availability of prey fish and resulting impacts on survival of youngest chick in many broods.	Bird Island – objective not achieved; 0.86 chicks / pair Ram Island – objective not achieved; 0.87 chicks / pair Penikese Island – objective achieved – 1.12 chicks/pair Achieved objective of removing ≥90% of predatory individuals; however, productivity objective not met at Bird and Ram Islands due to exceptionally low availability of prey fish, resulting in almost zero survival of the youngest chick of the brood.
Stewart B. McKinney NWR (CT): Maintain productivity of at least 1.0 chicks/pair through targeted predator control and nesting structures.	Objective achieved – 0.91-1.09 chicks / pair (nesting structures installed; predator control work 100% completed)	Objective not achieved - 0.62 to 0.67 chicks / pair; fell short of objective primarily due to lack of good prey fish. (nesting structures installed; predator control work 100% completed)	Objective achieved – 0.92-1.11 fledges/nesting pair. (nesting structures installed; predator control work 100% completed)
Great Gull Island (NY): Achieve a productivity of at least 1.0 chicks/pair (with a target of 500 new nests) through habitat improvements and nesting structures.	Objective achieved - 1.16 chicks / pair (Note: habitat improvements and nesting structures not complete; therefore target of 500 new nests was not achieved)	Objective not achieved – 0.95 chicks/pair; fell slightly short of objective likely due to bait fish being late and contributing to smaller clutches and lower productivity. (Terraces and new nesting structures built and installed, but they were not all in place for the 2014 nesting	Objective achieved – 1.25 chicks/pair. A total of 1,849 Roseate tern pairs are estimated to have nested on the island this year, up from 1610 estimated in 2014. Of these, 215 nests were in man-made nesting sites; just over 20% of these were in

		season)	newly constructed nest boxes on the new terraces available for the first time in 2015. The rest of the sites were constructed in the 1980s with renovations completed in 2014.
3. Enhance and protect 42 acres of staging habitat for Roseate Terns. ***4. Contact at least 3500 people through focused on-site interpretation at Roseate Tern staging sites and implement an education campaign.***			
Staging Habitat Objective	**2013 Accomplishments**	**2014 Accomplishments**	**2015 Accomplishments**
Rachel Carson (ME): Enhance 10 acres (at 2 different sites) through an education campaign, and contact at least 1200 people.	100% implemented with 10 acres benefiting (5 different sites) from outreach and partial fencing. 1398 people were contacted and a brochure was developed and distributed.	100% implemented with 10 acres benefiting (5 sites) from outreach and partial fencing. Disturbance surveys were not conducted in 2014 due to low Roseate Tern usage. 1,225 people were contacted and a brochure that was developed in 2013 was distributed. Outreach was also conducted at schools and refuge headquarters, as well as via social media.	100% implemented with 10 acres benefiting (5 sites) from outreach and partial fencing. Some disturbance surveys were conducted as well as surveys for band resighting. 8,196 people were contacted through outreach at refuge headquarters, on beaches, and through social media. Flagged juvenile Roseate Terns from NY, MA, and ME were seen staging on refuge beaches.
Nantucket NWR (MA): Enhance and protect 6 acres through a seasonal closure and education campaign, and contact at least 1500 people.	50% implemented with 6 acres protected from a closure that minimized human disturbance during the entire staging period. However, due to the late disbursement of funds, and the agency-wide hiring freeze, the education campaign materials were not completed. Also, vehicle access to the Refuge was prohibited for 1 month during the staging period because of sensitive resources adjacent to the refuge and this significantly reduced the number of	75% implemented with 6 acres protected from a closure that minimized human disturbance during the entire staging period. 909 people were contacted and educated about roseate tern biology and conservation. Disturbance surveys were conducted approximately 4x/week in July and August, and only 3 of nearly 500 disturbance events were known to be caused by humans. Coloring book will be completed in 2015, as well as new signage for tern staging sites.	100% implemented with 6 acres protected from a closure that minimized human disturbance during the entire staging period. Over 1,000 people were contacted and educated about roseate tern biology and conservation. Disturbance surveys were conducted approximately 2-3x/week in July and August, and only 4 of approximately 250 disturbance events were known to be caused by humans. A new contractor was found for the coloring book which will be completed in

	people we were able to contact about staging terns. 555 people were contacted and coloring book pages were drafted.		2016, as well as new signage for tern staging sites.
Trustom Pond NWR and other RI Sites (RI): Enhance and protect 26 acres (at 3 different sites) through a seasonal closure and education campaign, and contact at least 300 people.	100% implemented with 26 acres benefiting (3 different sites) from outreach. 288 people were contacted and a fact sheet was developed and distributed.	100% implemented with 26 acres benefiting (3 sites) from protection and enhancement through a seasonal closure. 355 people were contacted and educated about roseate tern biology and conservation. A brochure that was developed in 2013 was distributed. Staff performed staging counts and re-sighted banded birds at all three sites. A maximum count of 647 common terns and 40 roseate terns were observed.	100% implemented with 26 acres benefiting (3 sites) from protection and enhancement through a seasonal closure. 427 people were contacted and educated about roseate tern biology and conservation. A brochure that was developed in 2013 was distributed. Staff performed staging counts and re-sighted banded birds at all three sites. Sixty staging surveys were conducted and a total of 142 roseate terns and 3,231 common terns were observed across all surveys. 32 Roseate terns and 2 common tern field bands were resighted.
Monomoy NWR (MA): Staging tern use and potential human disturbance will be monitored as time allows with an objective of contacting at least 200 people.	100% implemented with staging habitat monitored, but only 19 people were contacted (public use was very low). Brochure was also developed and will be distributed next year.	100% implemented but public use rates were very low this year. Disturbance to staging terns on South Beach and South Monomoy Island is minimal. Tern numbers were also lower than in previous years.	100% implemented but public use rates were very low this year. Staging counts were performed in late July, though roseate tern numbers and public use continued to be very low. Public education regarding roseate terns and disturbance continued in our visitor contact station.

Project Measureable Objectives and How Measured (Long -term)

We had originally planned for all of our management and restoration actions to be implemented in FY 2013, and had hoped to continue monitoring in future years to begin to evaluate our success at meeting longer term objectives of increased survival, recruitment, and population growth. Because of the timing of disbursement of funds, the delay in getting Cooperative Agreements processed, the Service-wide hiring freeze, and nesting / staging phenology, we were not able to meet all our short term objectives in 2013. Management work that wasn't accomplished in 2013 was completed in 2014, but monitoring work originally scheduled for 2014 at some sites was postponed until 2015. As a result, this will prolong the timeline in evaluating the success of meeting our long-term objectives.

Did you accomplish the objectives established for this year:

- Less than 70% conservation objective achieved
- 70 – 79% conservation objective achieved
- 80 – 89% conservation objective achieved
- 90% or more conservation objective achieved

Assessment of <u>Long-term</u> Performance this year:

- Less than 70% conservation objective achieved
- 70 – 79% conservation objective achieved
- 80 – 89% conservation objective achieved
- 90% or more conservation objective achieved

Project Status:

Funds for this project, although awarded prior to the start of the Roseate Tern breeding season in 2013, were not disbursed and available for most sites until June 2013, when Roseate Terns had already begun nesting. The timing of availability of funds, combined with the hiring freeze, resulted in our not meeting some of our objectives for 2013 at some sites. However, all management actions that were deferred in 2013 were initiated (and mostly completed) in 2014, or else completed in 2015. Please see the table above for details.

Objectives were 100% achieved (or nearly so) at all sites in 2015. At some sites, deferring habitat management work until 2014 meant that 2015 marked the first year of post-management monitoring. All sites with productivity objectives monitored productivity in 2015, and at some sites, additional management actions were implemented with other sources of funding.

Future Actions:

All sites receiving money in FY 2016 are planning to continue monitoring so we can evaluate our progress towards meeting our short- and long-term objectives.

2015 Photo Documentation of Work (please see previous reports for 2013 and 2014 photos)**:**

Newly constructed blinds on Great Gull Island which greatly facilitated Roseate Tern monitoring efforts. Photo Credit: H. Hays

Roseate tern courtship display on newly constructed terraces at Great Gull Island. Photo Credit: P. Paton

Roseate terns exploring nesting structures on new terraces at Great Gull Island. Photo Credit: P.Paton

A Roseate Tern at Stratton Island stands above its nest in an artificial "rock cave" built by island researchers. Photo Credit: S. Schubel

Stratton Island researchers monitor Roseate Tern productivity at artificial “rock caves”. Photo Credit: S. Schubel

Common Terns utilize newly created habitat on Falkner Island, Stewart B. McKinney NWR, which helped reduced overcrowding in other areas of the island for Roseate Terns. Photo Credit: J. Morelli

Guilford Boy Scouts help arrange Roseate Tern nest boxes on Falkner Island, Stewart B. McKinney NWR. Photo Credit: None

Field crew staff monitor Roseate Tern nests on Falkner Island, Stewart B. McKinney NWR. Photo Credit: N. Ingebretsen

Artificial nesting structures for Roseate Terns were placed among thriving goldenrod transplants at Monomoy NWR. Photo Credit: K. Titherington

Monitoring efforts confirmed that artificial nesting structures were used successfully by Roseate Terns at Monomoy NWR. Photo Credit: K. Titherington

Terns establish nests in newly burned area at Seavey Island. Photo Credit: J. Kanter